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Deep learning and hyperspectral imaging for unmanned aerial vehicles

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This dissertation represents at least four years of dedicated research into artificial intelligence, a topic that has always fascinated me. During my previous research in the field of computer vision I already had a chance to do research into evolutionary algorithms for solving several real-life challenges (among which was bacterial colony counting). Deep learning has caused, which can genuinely be called, a revolution in the field of computer vision. During this research I started out with traditional techniques and gradually found new ways to integrate existing computer vision knowledge and deep learning. Ironically, I ended up finding an improved method for counting. The main challenge throughout this project was keeping up with the high pace of the developments within the field.

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Author publications

Thesis publications

Dijkstra, K., van de Loosdrecht, J., Atsma, W.A., Schomaker, L.R.B. and Wiering, M.A., CentroidNetV2: A Hybrid Deep Neural Network for Small-Object Segmentation and Counting. *Neurocomputing*. Manuscript submitted for publication.

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